Cogongrass

Alabama Job Sheet No. AL595A

Background

Cogongrass (*Imperata cylindrica* (L.) Beauv.), is a very aggressive exotic perennial grass that was introduced to Mobile, Alabama, in 1911 in packing material from Japan. Designated as the world's seventh worst weed, it is on the Federal list of noxious weeds and has been identified on six continents.

Cogongrass is spreading rapidly across Alabama and the southeast, reducing forest productivity, destroying wildlife habitat, encroaching in pasture and hayland, and impacting rights-of way. If left unchecked, it can quickly become the dominant understory, choking out desirable vegetation.

Cogongrass thrives where fire is a regular occurrence. It is highly flammable and creates a severe fire hazard. It burns extremely hot, especially in winter (Figure 6). The extreme temperatures generated when cogongrass burns can kill seedling trees and native plants. In a controlled burn, it can cause harm to healthy pine stands because it intensifies the heat that can generate stress in mature pine stands leading to disease and insect infestation like the southern pine beetle.

Dense stands of cogongrass can also destroy wildlife habitat. Cogongrass out-competes native grasses and forbs that are important to many threatened species like the gopher tortoise, Eastern indigo snake, Bachman's sparrow, Henslow's sparrow, and bobwhite quail.

Cogongrass is sometimes called japgrass, bloodroot grass (red varieties), and Red Barron (red varieties), and may be mistaken for other grasses. The red varieties continue to be sold in the U.S., although its sale is illegal in the state of Alabama.

Identification

Cogongrass has some distinctive vegetative features that aid in identification (Figure 1). It is rarely found as a single plant, but it quickly forms patches or infestations, often in a circular pattern. Cogongrass grows in full sunlight to partial shade, and, thus, can invade a range of sites. It aggressively invades rights-of-way, new forest plantations, open forests, old fields, and pastures. The plant is absent in areas of frequent tillage.

Plants vary in height, even in the same patch, from 1 to 4 feet (Figure 5). Taller leaves lean over in late summer. Leaves measure .5- to 1-inch wide and are commonly 12 to 30 inches long. They rarely have a lush green color and appear yellowish green. The leaves may turn a reddish color in the fall, correlating to extreme changes in temperature.

Figure 1. Cogongrass has a whitish upper midrib on a mature leaf that is often not centered on the blade.

The whitish upper midrib of a mature leaf is often not centered on the blade as it is on most grasses, making identification somewhat easier (Figure 1). Also, leaf margins are rough to the touch due to tiny, saw-like serrations, a common trait of other grasses as well. This rough margin can cut the tongue of a grazing animal, and due to high silica content, cogongrass is a useless forage crop. The leaves appear to arise directly from the soil, giving the impression that the plant is stemless, but short stems are present. A few short hairs can arise at the node, the place where the leaf arises from the stem, but otherwise the plant is hairless.

Another key identifying feature of cogongrass is its production of fluffy, white, plume-like seed heads that appear in late spring or early summer (or after a disturbance) (Figure 2). This spring flowering is contrary to most summer grasses, which flower later in the season. Cogongrass can initiate flowering at other times of the year in response to a disturbance such as herbicide application, fire, mowing, or the first hard frost. Seed heads range from 2 to 8 inches in length and can contain as many as 3,000 seeds. Each seed has silky, white hairs that blow off like dandelion seeds. Seed viability is variable, and seeds must land on bare ground to germinate.

Rhizomes of cogongrass are white, segmented, and branched and have been found extending 48 inches below the soil surface. They more commonly dominate the upper 6 to 8 inches of the soil surface (Figure 3). Rhizomes are sharp pointed and often pierce the roots of other plants and unprotected human feet and hands. Each rhizome segment can give rise to a new plant.

Recommended Control Measures

Cogongrass is often spread throughout the state by contaminated equipment (Figure 4). To prevent spread of cogongrass, do not mow, bushhog, or even go through the grass when seed heads are present. Do not work in an infested area when soil is muddy. Rhizomes can be broken off and get stuck on equipment. Do not push roads or firelanes or grade roads through cogongrass. If it is unavoidable, do the contaminated sites last.

If you must work in cogongrass infested areas, it is important to clean vehicles, equipment, and clothing before moving into an uncontaminated site. Cleaning vehicles and equipment in the field is challenging, but important. Check radiators, grills, undercarriages, and tops of vehicles. Check blades and under decks of bushhogs and mowers. Check tires, rims, and tracks of equipment and places where seeds and rhizomes can stick to grease and mud. Finally, schedule a thorough cleaning at a garage or other facility as soon as possible. Be sure to check clothing, especially wrinkles, cuffs, footwear, and hats.

Methods for controlling cogongrass varies according to the rhizome age, mat density, and depth. Young infestations are usually easier to control than older ones. For new patches, tillage can eliminate cogongrass from an area if it is continued during the course of a growing season. The initial tillage should begin in the spring (March

Figure 2. In late spring or early summer, cogongrass produces fluffy, white, plume-like seed heads.

Figure 3. Rhizomes of cogongrass are white, segmented, and branched and have been found extending 48 inches below the soil surface.

through May) with an implement that inverts the soil to a depth of at least 6 inches. Perform additional tillage with a disk harrow or other appropriate implement every 6 to 8 weeks.

Dry periods during the summer aid in the control of cogongrass. The area can be planted to a fall cover crop and then followed the next season with perennial or annual grass or broadleaf crops.

Tillage may not be an option on steep slopes, established tree plantings, or around dwellings.

Out of dozens of herbicides tested for control of cogongrass, only two, with the active ingredients glyphosate (*RoundUp, *Glypro, *Accord, etc.) and imazapyr (*Arsenal, *Arsenal AC, and *Chopper), have much effect on this grass.

Even at high rates and combinations of herbicides, cogongrass often regenerates within a year following a single application. A minimum of two applications per year is needed with older infestations requiring 2 to 3 years of treatment to eliminate rhizomes.

Glyphosate has no soil residual activity and permits planting replacement species after application. Imazapyr has both soil and foliar activity and can severely injure susceptible plant species that are planted too soon after the last treatment. Most vegetables, row crops, and ornamentals *will be injured* if planted within 24 months following an imazapyr application. As with all pesticides, proper handling and usage are of utmost importance. *Always read and follow label directions.*

In Pine Plantations

Cogongrass management in southern pines is more difficult.

Pine Establishment

- On infested sites, prescribe burn during winter, if feasible, to eliminate logging debris and cogongrass thatch at harvest.
- Chemically site prepare Arsenal AC* (2 pints/ac) or Chopper* (4 pints/ac) plus glyphosate* (4 lbs. ai/ac) in the fall.
- Include appropriate surfactant at recommended rates with above spray mixture.
- Plant pine seedlings at least 3 months after chemical application.

Figure 4. Cogongrass can collect on equipment and must be cleaned to prevent re-infestation.

Pine Release

- Apply Arsenal AC (4 oz/ac) in late summer. This is especially effective if the cogongrass was previously treated with site preparation sprays. *Do not* use surfactant with this treatment since severe tree injury or mortality will result.
- In loblolly pine only, Oust XP (1-2 oz/ac) can be tank-mixed with Arsenal AC (4-6 oz/ac) for improved cogongrass control.

Established pines (DBH > 5 inches)

- Use above site preparation treatment (August through September) being careful not to contact pine foliage.

Small Areas and Home Landscapes

Cogongrass in small (less than 20 foot in diameter) patches can be treated with a glyphosate solution in early fall (August through October). A 2 percent solution of 41 percent active ingredient material (3 fluid ounces per gallon of water) or a 4 percent solution of a 21 percent active ingredient glyphosate (6 fluid ounces per gallon of water) sprayed on the green leaves and allowed to dry for 2 to 3 hours will kill the top growth of cogongrass. Regrowth must be treated the following spring and possibly the next fall to ensure rhizome kill. Caution: glyphosate herbicide spray mixtures should be considered nonselective when sprayed on green tissue. Keep spray and spray drift off any desirable plants. Treat larger infestations with glyphosate using a tractor- mounted boom sprayer

calibrated to deliver 10 to 15 gallons of spray solution (water + herbicide) per acre. Use glyphosate at the rate of 3 to 4 pounds active ingredient per acre. This translates into 3 to 4 quarts of herbicide per acre for the 41 percent active material. Replacement species should be planted in the area following the last treatment (either in the spring or in the second fall) to suppress reinfestation. Plant crimson clover or ryegrass after the fall application of glyphosate to stabilize sloping areas through winter. Replace this cover crop with a perennial grass, such as bahiagrass, or with shrubs planted in a high-density pattern to provide shade over the area.

With all labeled herbicides, follow the label directions carefully as they relate to the conditions at hand.

Pesticide labels specify desirable application methods, rates and precautions and they should be followed.

References

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- *Trade names are used only to give specific information. The Natural Resources Conservation Service does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.*

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Figure 5. Cogongrass varies in height, even in the same patch, from 1 to 4 feet.

Figure 6. Cogongrass dies back in the winter allowing it to burn extremely hot.